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Hello, and welcome to this tutorial on evaluating arguments. Today, we will be discussing how to evaluate arguments by practicing. After a brief review, we will apply what we know about determining deductive and inductive arguments in order to properly evaluate them.

So let's just dive in. To evaluate an argument, we must first determine whether it is deductive or inductive. Recall, a deductive argument is an argument whose inferential claim is a claim of logical certainty, while an inductive argument is an argument whose inferential claim is a claim less than logical certainty.

When determining which of these two an argument is, you can ask the question, is the inferential claim a claim of logical certainty? If the answer is yes, the argument is deductive. If the answer is no, then the argument is inductive. But remember that you cannot properly evaluate an argument without first identifying whether it is deductive or inductive, as all evaluation will be type specific. However, once we've made this determination, we can go on to evaluate the structure.

Recall that we move on to this next step by asking ourselves, assuming all premises were true, would they support the conclusion? Or, in other words, for deductive arguments, is it possible for all of the premises to be true yet the conclusion false? Or do the premises definitively establish the conclusion?

And for inductive arguments, we ask, is it probable for all the premises to be true and the conclusion false? Or do the premises make probable the conclusion? In this step, we are only trying to determine whether the premises support the conclusion or not.

For deductive arguments, we use the terms valid and invalid. And for inductive arguments, we use the term strong and weak. If you will recall, a valid argument is a deductive argument whose premise or premises logically guarantee their conclusion, while an invalid argument is a deductive argument in which the premise or premises do not guarantee their conclusion.

Validity and invalidity only apply to deductive arguments. For inductive arguments, we instead use strong and weak. A strong argument is an inductive argument in which the premises render the conclusion probable. Whereas a weak argument is an inductive argument in which the premises do not render the conclusion probable.

A valid argument is to be equated with having good deductive structure, and that's all. Whether the premises are true or false, that is, whether the factual claim is a good one, does not have anything to do with validity and must be treated separately. Likewise, a strong argument is to be equated with having good inductive structure, and that's all. Whether the premises are true or not, again, is a separate issue.

After evaluating the inferential claim, the last step in evaluating an argument then is to check the factual claims. As we have seen, whether the premises are true or not do not enter into the determination of validity and deductive arguments or strengthen inductive arguments. However, validity and strength are important because it means that the premises lead to the conclusion. After that, we simply have to decide whether we accept said premises.

Put another way, if the argument has been determined as valid or strong, we simply need to ask our question of fact, are all premises true? This will determine whether a valid argument is sound or unsound for deductive arguments or whether a strong argument is cogent or uncogent for inductive arguments. Let's make these evaluations more precise.

A sound argument is a deductively valid argument with all true premises, while an unsound argument is simply any deductive argument that is not sound. Similarly, a cogent argument is an inductively strong argument with all true premises, while an uncogent argument is any inductive argument that is not cogent. Now that all the verbiage is out of the way, the only thing left to do is practice, practice, practice.

A helpful tip to evaluating arguments is to think of it as a procedure. The flow chart on the screen will help you do just that. So now let's apply what you've learned with a few examples. In these examples, evaluate the argument by determining if it is, first, inductive or deductive, second, valid, invalid, weak, or strong, and, third, sound, unsound, cogent, or uncogent. Each answer should have three things.

Suppose I gave the following argument. The last time I wore this shirt, my team won. Therefore, if I wear this shirt again on game day, they will win again. Pause the video and see if you can give all three parts of the evaluation of this argument.

First, this argument is inductive. I know this because I am assigning a cause and effect relationship between wearing the shirt and the team's performance. We then turn to the inferential claim. Since this is an inductive argument, we ask, knowing only that the premise is true, would I bet on the conclusion? The answer should be no. Superstition, after all, is unreasonable.

Notice then that this makes the argument weak, as the premise does not adequately support the conclusion. But since only strong arguments can be cogent, I already know that the argument is uncogent, even if the premise is true. Hence, this argument is properly evaluated as inductive, weak, and uncogent.

Let's try another one. If you are in Indiana, you are in the US. You are not in the US. Therefore, you are not in Indiana. Once more, pause the video as long as you need in order to determine all three parts of the evaluation.

First, this is a deductive argument. The conclusion is supposed to follow from the meaning of an if-then, not from

any facts about geography. Geography only tells me whether the premise is true or false. It does not tell me about the inference. Notice also that there is nothing about causation here. It's about definition.

Next, we can evaluate the inferential claim. Put another way, does the inference attain logical certainty? Or can you imagine the premises being true and the conclusion false? We should ask, assuming it were true that if you are in Indiana you are in the US and assuming it were true that you were not in the US, would it follow that you were not in Indiana?

The answer is clearly yes. Put another way, I cannot imagine it being true that all parts of Indiana are in the US mean not being in the US but still somehow being in Indiana. This means that the argument is valid that the premises establish the conclusion.

Now, I simply have to ask if both premises are true. Notice that premise one is true regardless of your location. However, I assume that since you are taking this course, you are indeed located in the United States, making premise two false. Hence, we would call this argument deductive, valid, and unsound. Even if you are not in Indiana, you believe that for reasons besides this argument.

Let's try another one. In Minnesota, it has snowed in January every year for the past 80 years. Therefore, Minnesota will get snow in January again this year. Again, pause as necessary.

This argument is inductive because it relies on cause and effect. It is a prediction because it is predicting a similar cause and effect in the future. When we ask our inference question, we see that the conclusion is very likely given the premise. And therefore, we call the argument strong.

Lastly, the premise is true. Therefore, this argument is inductive, strong, and cogent and therefore gives you good reason to think that the conclusion is true that it will snow in Minnesota this January.

Let's try a final argument. All dogs are mammals. No crocodiles are mammals. Therefore, no crocodiles are dogs. Since this is the last argument, really try to get all three parts of the evaluation. Pause the video for as long as it takes.

First, this is a deductive argument because it is supposed to follow from the definition of all, rather than from facts about biology. And if you were planning on taking the LSAT to get into law school, you would better get very good at doing these all, no, some arguments.

Next, we can evaluate the inferential claim. I cannot imagine an instance where the premises are true but the conclusion is false. Therefore, this argument is valid.

Finally, we can evaluate the factual claims. It is true that all dogs are mammals. It is true that no crocodiles are dogs. Therefore, the argument is sound. This deductive, valid, sound argument establishes its conclusion with logical certainty, which is a shame because a crocodile dog would make an awesome pet.

So let's go ahead and recap. In this tutorial, we learned that before we can evaluate an argument, we must first determine whether it is deductive or inductive. Once we have done so, we can check the inferential claims using the proper terminology of valid and invalid for deduction and strong and weak for induction. Lastly, we consider the factual claim or claims in order to render a final evaluation of the argument sound and unsound for deductive arguments, cogent and cogent for inductive arguments. Thanks for watching, and we'll see you next time.